AMENDMENTS TO THE CLAIMS

1. (currently amended)   A method of processing an input image to obtain an output image, the input image being formed from input pixels having brightness levels, the method comprising the steps of:

(a)   detecting pixel-to-pixel variations in the brightness levels in at least one direction in the input image, thereby generating high spatial frequency information and a variable zoom ratio;

(b)   setting interpolation points with spacing varying according to the high spatial frequency information and the variable zoom ratio; and

(c)   generating output pixels from the input pixels by interpolation at the interpolation points.

2. (original) The method of claim 1, wherein said step (b) assigns a basic value to said spacing in parts of the image in which the brightness level of the input pixels is uniform, divides each portion of the image in which the brightness levels of the input pixels vary into a first part and a second part, reduces said spacing to less than the basic value in the first part, and

increases said spacing to more than the basic value in the second part.

3. (original) The method of claim 1, wherein said step (b) assigns a basic value to said spacing in parts of the image in which the brightness level of the input pixels is uniform, divides each portion of the image in which the brightness levels of the input pixels vary into a first part, a second part, and a third part, reduces said spacing to less than the basic value in the first part and the third part, and increases said spacing to more than the basic value in the second part.

4. (original) The method of claim 1, wherein said step (a) includes calculating a first derivative of the brightness levels in said one direction.

5. (original) The method of claim 4, wherein said step (a) includes calculating a second derivative of the brightness levels in said one direction.

6. (original) The method of claim 4, wherein said step (a) includes calculating a third derivative of the brightness levels in said one direction.

7. (original) The method of claim 4, wherein said step (a) includes performing a spatial filtering operation to obtain a certain spatial frequency component of the image.

8. (Canceled)

9. (original) The method of claim 1, wherein said step (a) includes detecting patterns of variation in the brightness levels of the input pixels.

10. (original) The method of claim 9, wherein said patterns describe polarities of the pixel-to-pixel variations in the brightness levels of the input pixels.

11. (original) The method of claim 10, wherein said patterns also describe magnitudes of the pixel-to-pixel variations in the brightness levels of the input pixels.

12. (original) The method of claim 9, wherein said patterns describe changes in the brightness levels of three consecutive pixels among the input pixels.

13. (original) The method of claim 9, wherein said patterns describe changes in the brightness levels of five consecutive

pixels among the input pixels.

14. (original) A machine-readable storage medium storing a machine-executable program for processing an image by the method of claim 1.

15. (currently amended) An image-processing apparatus for processing an image formed from input pixels having brightness levels to obtain an output image, comprising:

a first processing unit for detecting pixel-to-pixel variations in said brightness levels in at least one direction in the image, thereby generating high spatial frequency information and a variable zoom ratio;

a second processing unit coupled to the first processing unit, for setting interpolation points with spacing varying according to the high spatial frequency information and the variable zoom ratio; and

a third processing unit coupled to the second processing unit, for generating output pixels from the input pixels by interpolation at the interpolation points.

16. (original) The image-processing apparatus claim 15, wherein the second processing unit assigns a basic value to said spacing in parts of the image in which the brightness levels of the input

pixels is uniform, divides each portion of the image in which the brightness levels of the input pixels vary into a first part and a second part, reduces said spacing to less than the basic value in the first part, and increases said spacing to more than the basic value in the second part.

17. (original) The image-processing apparatus claim 15, wherein the second processing unit assigns a basic value to said spacing in parts of the image in which the brightness levels of the input pixels is uniform, divides each portion of the image in which the brightness levels of the input pixels vary into a first part, a second part, and a third part, reduces said spacing to less than the basic value in the first part and the third part, and increases the spacing to more than the basic value in the second part.

18. (currently amended) An image display apparatus for displaying an image formed from input pixels having brightness levels, comprising:

a memory unit for storing the brightness levels of the input pixels;

a first processing unit coupled to the memory unit, for detecting pixel-to-pixel variations in said brightness levels in at least one direction in the image, thereby generating high spatial frequency information and a variable zoom ratio;

a second processing unit coupled to the first processing unit, for calculating interpolation points with spacing varying according to the high spatial frequency information and the variable zoom ratio;

a third processing unit coupled to the second processing unit, for generating output pixels from the input pixels by interpolation at the interpolation points; and

a display unit coupled to the third processing unit, for displaying the output pixels.

19. (original) The image display apparatus of claim 18, wherein the second processing unit assigns a basic value to said spacing in parts of the image in which the brightness levels of the input pixels is uniform, divides each portion of the image in which the brightness levels of the input pixels vary into a first part and a second part, reduces said spacing to less than the basic value in the first part, and increases said spacing to more than the basic value in the second part.

20. (original) The image display apparatus of claim 18, wherein the second processing unit assigns a basic value to said spacing in parts of the image in which the brightness levels of the input pixels is uniform, divides each portion of the image in which the brightness levels of the input pixels vary into a first part, a

second part, and a third part, reduces said spacing to less than the basic value in the first part and the third part, and increases the spacing to more than the basic value in the second part.